Program for Arterial System Synchronization (PASS) FY12/13 Cycle

Vasco Rd/First St/Portola Ave/Livermore Ave

City of Livermore I Caltrans I Metropolitan Transportation Commission

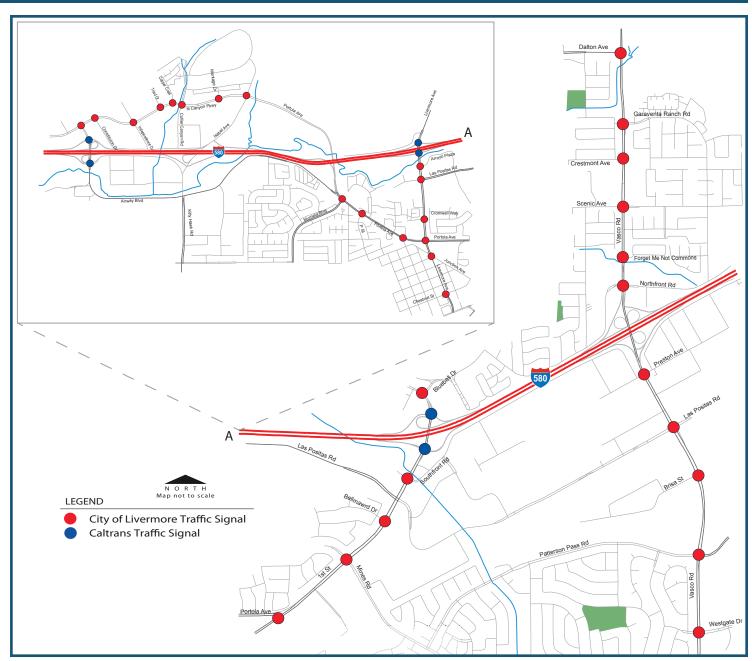
PROJECT OVERVIEW

The City of Livermore, in conjunction with Caltrans, received a Program for Arterial System Synchronization (PASS) grant from the Metropolitan Transportation Commission to optimize signal coordination at 39 signals along N Canyons Pkwy, Portola Ave, Airway Blvd, Portola Ave, Livermore Ave, First St/Springtown Blvd, and N/S Vasco Rd. The project involved developing the weekday coordination plans for all project signals, and incident management flush plans for signals along N Canyons Pkwy, Portola Ave and Livermore Ave.

The PASS project installed three GPS devices at Caltrans intersections to enable synchronization with the city signals. The following major tasks were completed in this project: collecting traffic volumes (ADT) and turning movement counts, including bike and pedestrian counts, at all project intersections; analyzing this traffic data including collision data to develop optimized signal timing plans; implementing and fine-tuning the plans in the field; and conductinig travel time surveys to analyze the performance of the new timing plans.







INCIDENT MANAGEMENT FLUSH PLANS

The PASS project also developed signal coordination flush plans along North Canyon Pkwy, Portola Ave, and Livermore Ave to help manage the traffic when an incident occurs on the adjacent I-580. These signal timing plans called the Incident Management flush plans aim to effectively take the diverted traffic from the city streets back onto the freeways. The city staff are now able to remotely select and activiate these flush plans based on the location and time of the incident on the freeway.

BENEFITS TO VARIOUS MODES



BENEFITS TO BICYCLISTS: For improved safety, the minimum green intervals were reviewed for bicyclists on the corridors. Changes to minimum green

intervals were made at 21 project intersections.



BENEFITS TO PEDESTRIANS:

For improved safety, the pedestrian intervals were reviewed and increased at most intersections based on

current 2012 California MUTCD standards. Changes to pedestrian timing were made at all 33 project intersections.



BENEFITS TO TRAFFIC SAFETY:

To enhance traffic safety, the yellow clearance timing parameters were updated based on current standards.

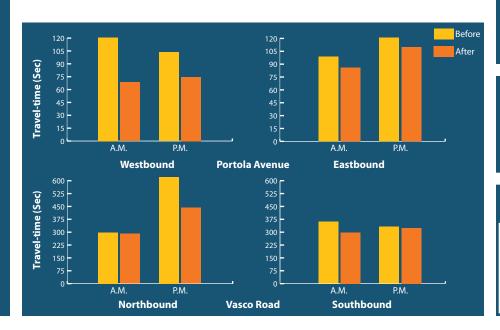
Changes to clearance intervals were made at 13 project intersections.

Project Costs	
Consultant Costs (Basic Services/Plans, Incident Management Flush Plans)	\$97,135
Other Project Costs (Reduced Services, GPS Clocks)	\$710
Agency Staff Costs (Estimate)	\$21,338
Total Costs	\$119,183

Project Benefits				
	Annual Average		Lifetime (5 Years)	
Measures	Savings	Monetized Savings	Savings	Monetized Savings
Travel Time Savings	16,599 hrs.	\$316,834	82,994 hrs.	\$1,584,169
Fuel Consumption Savings	46,981 gal.	\$188,806	234,906 gal.	\$944,029
ROG Emissions Reduction	0.28 tons	\$356	1.41 tons	\$1,778
NOx Emissions Reduction	0.33 tons	\$5,906	1.64 tons	\$29,532
PM10 Emissions Reduction	0.06 tons	\$8,298	0.29 tons	\$41,491
CO Emissions Reduction	2.25 tons	\$174	11.24 tons	\$869

Total Lifetime Benefits \$2.601.868

Overall Project Benefits	Auto
Average Decrease in Travel Time	11%
Average Speed Increase	15%
Average Fuel Savings	8%
Average Reduction in Signal Delay	36%
Average Reduction in Number of Stops	37%
Overall Benefit-Cost Ratio	24:1



PROJECT BENEFITS SUMMARY



Average Reduction in Auto Signal Delay: 36%

Average Reduction in Number of Stops: 37%

Auto Fuel Consumption Savings: 8% or 234,906 gallons





Total Emissions Reduced (ROG, Nox, PM10, CO): 14.58 tons

Auto Travel Time Savings: 11% or 82.994 hours





Overall Project
Benefit-cost Ratio
= 24:1

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LIVERMORE

